NIH K Series Grants:
what needs to be in them;
how they will be reviewed;
how to write them.

Bill Hay MD
University of Colorado School of Medicine
Anschutz Medical Campus, F441
Perinatal Research Center
13243 East 23rd Avenue
Aurora, CO 80045
bill.hay@ucdenver.edu

What is a K Award? See NIH Website.

http://grants.nih.gov/training/careerdevelopmentawards.html

1. Purpose of NIH Career Development Awards is to help the promising new investigator achieve research independence (i.e. to compete successfully for R01 funding).

2. Key to Ks is a plan for receiving new or specialized training integrated with the research project that will allow you to become an independent investigator.

3. The organizing principle of your K grant application should be preparing for the R01 grant that you will submit at the end of the K award.

4. Research, training, and mentoring all must be linked.

What is a K Award?

Everything you state that you are going to do must be explained for what benefit it will provide to you to make you an independent investigator.

For example—

> Do not just list courses—identify those that you will take, state what you will learn from them, and explain how they are specific and necessary for your needs—what they will do for you.

What must be in a K application?

http://grants.nih.gov/training/careerdevelopmentawards.html

- **Specific Aims (1 page)**
- **First three items of Candidate Information:**
  - **1) Candidate's Background,**
  - **2) Career Goals and Objectives and Candidate's Plan for Career Development and Training Activities During Award Period**
  - **3) Research Strategy (12 pages)**
- **Training in the Responsible Conduct of Research (1 page)**
- **Plans and Statements of Mentor and Co-mentor(s) (6 pages)**
- **Letters of Support from Collaborators, Contributors, Consultants (6 pages)**
- **Description of Institutional Environment (1 page)**
- **Institutional Commitment to Candidate's Research Career Development (1 page)**
- **Biographical Sketch (4 pages)**

Scored Review Criteria for K Grants

1. **Candidate—YOU.**

2. **Career Development Plan/Career Goals & Objectives/Plan to Provide Mentoring**

3. **Research Plan**

4. **Mentor(s), Co-Mentor(s), Collaborator(s)**

5. **Environment & Institutional Commitment to the Candidate—YOU.**

What should be in your Candidate Statement

1. Candidate Statement in the application and Personal Statement in Biosketch should **drive home** your preparation for and commitment to a career in biomedical research (use first person!).
2. Background should not rehash history but explain your choices, highlight key opportunities you have pursued, and annotate major publications or other accomplishments.
3. Publications do count. Research publications, especially first author, are best. Major review articles are useful.
4. State how you have developed your own research question, designed the study to answer it, analyzed the data critically, and interpreted the data both for dissemination and for planning next phases of your research.
5. Clearly and strongly state both short and long term goals in your biomedical career plans.
6. Since this is career development, clearly define gaps in education, training, and research that this K will fill—and how.

What the reviewers want to know about you.

- Does the candidate have the potential to develop as an independent and productive researcher?
- Are the candidate's prior training and research experience appropriate for this award?
- Is the candidate’s academic, clinical (if relevant), and research record of high quality?
- Is there evidence of the candidate’s commitment to meeting the program objectives to become an independent investigator in patient-oriented research?
- Do the letters of reference address the above review criteria, and do they provide evidence that the candidate has a high potential for becoming an independent investigator?

What you need to put in your Candidate Statement

- **Make a compelling argument why you need a K award.**
- **State (and document) how you are appropriately trained and well suited to carry out the proposed work.**
- **State how the proposed research is appropriate to your level of experience and that of your collaborators.**
- **Explain exactly how additional training and mentored research experience will enable you to compete successfully for an R01.**
- **Be specific: give concrete examples of areas where you need additional training or experience in order to conduct the proposed research or areas where you are deficient that are directly related to your research career goals.**
- **State clearly, strongly, that you are committed to a scientific career in the discipline your research involves.**

Candidate

Pitfalls to avoid

- **Need for additional training is not well justified. The candidate (you) appears overqualified or underqualified without adequate explanation to justify a K award.**
- **Your potential to achieve independence is not well demonstrated.**
- **Your path to independence is not explained.**
- **Your personal statement is not coordinated with other parts of the application.**
- **Your record is not explained and development of research interests and goals is not clear.**

What should be in your K application regarding career development, career goals, and mentoring and training

- The candidate and the mentor are jointly responsible for the preparation of the career development plan. A timeline is often helpful. The mentor, in consultation with the applicant, may form a mentoring team (or an advisory committee) to assist with the development of the program of study or to monitor the candidate's progress through the career development program.
- The didactic (if any) and the research aspects of the plan must be designed to develop the necessary knowledge and research skills in scientific areas relevant to the candidate's career goals. The candidate must demonstrate they have received training or will participate in courses such as: data management, epidemiology, study design(including statistics), hypothesis development, drug development, etc., as well as the legal and ethical issues associated with research on human subjects.
- Describe the professional responsibilities/activities including involvement in other research projects beyond the minimum required 9 person-months (75% effort full-time professional effort) commitment to the K23 award. Explain how these responsibilities/activities will help ensure career progression to achieve independence as an investigator conducting patient-oriented research.

Strategies to create an effective Career Development and Training Plan.

- For candidates with substantial previous formal training in research, a plan that emphasizes “hands-on” research experience is appropriate.
- Degree-granting programs are appropriate for candidates with little or no previous formal training in research, but even these programs should be customized whenever possible.
- Describe in detail how you will acquire this training, such as through specific courses, other educational resources or practical experience gained from conducting the research.
- When listing courses, include enough details to argue that each course is leading you closer to your career goals.
- Reviewers expect you to fully exploit the training resources available to you.

What the reviewers want to know about your Career Development Plan / Career Goals & Objectives / Plan to Provide Mentoring

- What is the likelihood that the plan will contribute substantially to the scientific development of the candidate and lead to scientific independence?
- Are the content, scope, phasing, and duration of the career development plan appropriate when considered in the context of prior training/research experience and the stated training and research objectives for achieving research independence?
- Are there adequate plans for evaluating the candidate's research and career development progress?

What you need to state about your Career Development Plan / Career Goals & Objectives / Plan to Provide Mentoring

- **State and describe your career development plan, goals, and objectives and how these will be developed and promoted specifically for you.**
- **State how your mentor(s) will be (or have been) selected and how you will work with your mentor(s) to most effectively guide you in your research, education, and training.**
- **Describe how mentors, consultants, and collaborators will contribute to your education and training, including how they will evaluate your progress and your responses to evaluations.**

Describe your systematic Career Development plan with specific goals and objectives

1. Show a logical progression from prior research and training experiences to the research and career development experiences that will occur during the career award period and then to independent investigator status.

2. Justify your need for further career development to become an independent investigator.

3. Identify specific sources of training and how they will be used.

- Your institution: university, faculty development, research resources
- NIH courses and seminars
- 2014 NIMHD Translational Health Disparities Course
- External institutions
- Hands-on skills experiences
- Mentorship meetings
- Readings

Career Development Plan / Career Goals & Objectives / Plan to Provide Mentoring

Pitfalls to avoid

- **Knowledge/skills gaps are not addressed.**
- **The plan is not personalized and is too generic.**
- **The need for an award is not justified.**
- **The plan is not well detailed.**
- **The plan is unrealistic or inadequate.**
- **The transition to independence is not addressed.**
- **The plan is not coordinated with other parts of the application.**

What should be in a K application--Research plan

1. K applications are not solely research project applications, even though they contain a research project.

2. The research project is not a mini RO1, but that is not a bad model, since most likely you will use your research project to produce an RO1 towards the end of your K training period.

3. The research project in a K should be designed to show how it will produce an independent investigator. Thus, the research has to be novel and forward-looking as well as designed to obtain critical or essential new experience and preliminary data for an RO1.

What should be in your Research Plan

1. The research project should integrate new techniques and collaborations while obtaining preliminary data for an RO1.
2. The idea should be compelling and exciting and lead into a long-term program of research, as covered in your goals and objectives.
3. The research should encompass an appropriate scope for training and pilot study purposes.
4. Demonstrate to the reviewers that you know what you need, your mentor(s) and collaborators have the capacity to provide this for you in your research and training, and that you have the capacity to do the research in the time allowed (aim for doing everything in 3 years so you can be writing your R in the final years).

What the reviewers want to know about your Research Plan

- Relevance of the proposed research to your career objectives
- Appropriateness of the research plan to the stage of research development and as a vehicle for developing the research skills described in the career development plan
- Scientific and technical merit of the research question, design, and methodology

What you write in your Research Plan

- State how your research project and research program are specifically relevant to your career objectives.
- State how your research project and research program are appropriate to your stage of research development and as a vehicle for developing your research skills as described in the career development plan.

What you write in your Research Plan

- **Significance**
- **State how this study addresses an important problem.**
- **State how, if the aims of the application are achieved, scientific knowledge will be advanced.**
- **State what the effect of these studies will be on the concepts or methods that drive this field.**
- **Innovation**
- **State how the project employs novel concepts, approaches or methods.**
- **State how aims are original and innovative.**
- **State how the project challenges existing paradigms or develops new methodologies or technologies.**
- **Approach**
- **State how the conceptual framework, design, methods, and analyses are adequately developed, well integrated, and appropriate to the project aims.**
- **State/Acknowledge (with specific examples) potential problem areas and alternative tactics.**

Above all, be sure your research fits with the NIH Mission

fundamental knowledge

about the nature and behavior of living systems and the application of that knowledge

to enhance health, lengthen life, and reduce the burdens of illness and disability.

What should be in your application regarding Mentor(s), Co-Mentor(s), Consultant(s), Collaborator(s)

- Are the mentor's research qualifications in the proposed research area appropriate?
- Do(es) the mentor(s) adequately address the candidate's potential and his/her strengths and areas needing improvement? Is there adequate description of the quality and extent of the mentor's proposed role in providing guidance and advice to the candidate?
- Is there adequate description of the quality and extent of the mentor's proposed role in providing guidance and advice to the candidate? Is the mentor's description of the elements of the research career development activities, including formal course work adequate?
- Is there evidence of the mentor's, consultant's and/or collaborator's previous experience in fostering the development of independent investigators?
- Is there evidence of the mentor's current research productivity and peer-reviewed support?
- Is active/pending support for the proposed research project appropriate and adequate?
- Are there adequate plans for monitoring and evaluating the career development awardee's progress toward independence?

Plans and Statements of Mentor and Co-mentor(s)

- **You** must name a primary mentor who, together with you, is responsible for the planning, directing, monitoring, and executing the proposed program. You also may nominate co-mentors as appropriate to the goals of the program.
- The mentor should be recognized as an accomplished investigator in the proposed research area and have a track record of success in training and placing independent investigators.
- The mentor should have sufficient independent research support to cover the costs of the proposed research project in excess of the allowable costs of this award.
- Where feasible, women, individuals from diverse racial and ethnic groups, and individuals with disabilities should be involved as mentors to serve as role models.

Plans and Statements of Mentor and Co-mentor(s)

- The application must include a statement from the mentor providing: 1) information on his/her research qualifications and previous experience as a research supervisor; 2) a plan that describes the nature of the supervision and mentoring that will occur during the proposed award period; 3) a plan for career progression for **you** to move from the mentored stage of **your** career to independent research investigator status during the project period of the award, including a statement identifying the aspects of the proposed research **you** will be able to take with you upon transition to an independent position; and 4) a plan for monitoring **your** research, publications, and progression towards independence.
- Include a statement that **you** will commit at least 9 person-months (75% of full-time professional effort) to the POR program and related career development activities.

Plans and Statements of Mentor and Co-mentor(s)

- Similar information must be provided by any co-mentor. If more than one co-mentor is proposed, the respective areas of expertise and responsibility of each should be described. Co-mentors should clearly describe how they will coordinate their mentoring of you with that of the primary mentor. If any co-mentor is not located at the sponsoring institution, a statement should be provided describing the mechanism(s) and frequency of communication with you, including the frequency of face-to-face meetings.
- The mentor must agree to provide annual evaluations of your progress as required in the annual progress report.

What the Reviewers want to know about your Mentor(s), Co-Mentor(s), Consultant(s), Collaborator(s)

1. Mentors must have proof of successful mentoring, including career development of trainees and track record of getting trainees into independent and funded scientific careers, as well as evidence of their own high quality state of the art science and research funding.

2. Mentors must demonstrate commitment to you and what you will need and how they will go about this, particularly emphasizing how they will evaluate your progress and guide you to improvements as well as advancements.

3. Key is their active and frequent involvement in your work; they are not their for window dressing!

What you need to state about your Mentor(s), Co-Mentor(s), Consultant(s), Collaborator(s)

- **State (and document) how your mentor(s) are appropriately experienced and well suited to help guide you in your training (and help you carry out the proposed research).**
- **State how the Co-Mentor(s), Consultant(s), Collaborator(s) are appropriately experienced and well suited to help you carry out the proposed research (and help with mentoring).**
- **Their statements must specify their commitment to you and how they will effect this commitment.**

What must be in a K application: Description of Institutional Environment

- The sponsoring institution must document a strong, well-established research and career development program related to the candidate's area of interest, including a high-quality research environment with key faculty members and other investigators capable of productive collaboration with the candidate.
- Describe how the institutional research environment is particularly suited for the development of the candidate's research career and the pursuit of the proposed research plan.
- Describe the resources and facilities that will be available to the candidate, including any resources that are within a General Clinical Research Center (GCRC) or Clinical and Translational Science Award (CTSA).

Institutional Commitment to the Candidate's Research Career Development

- The sponsoring institution must provide a statement of commitment to the candidate's development into a productive, independent investigator and to meeting the requirements of this award. It should be clear that the institutional commitment to the candidate is not contingent upon receipt of this career award.
- Provide assurance that the candidate will be able to devote a minimum of 9 person-months (75% of full-time professional effort) to POR and related career development activities. The remaining effort should be devoted to activities related to the development of the candidate's career as an independent clinician-scientist, e.g. clinic responsibilities, teaching and administration, and/or additional research activities.

Institutional Commitment to the Candidate's Research Career Development

- Provide the candidate with appropriate office and laboratory space, equipment, and other resources and facilities (including access to clinical and/or other research populations) to carry out the proposed research plan.
- Provide appropriate time and support for any proposed mentor(s) and/or other staff consistent with the career development plan.
- Candidates who will be using the resources within a General Clinical Research Center (GCRC) or Clinical and Translational Science Award (CTSA) during the course of the award are requested to include a letter of agreement from either the GCRC or CTSA program director or the principal investigator as part of the application.

What the reviewers want to know about your Environment & Institutional Commitment to you.

- Is there clear commitment of the sponsoring institution to ensure that the required 75% minimum time of your effort will be devoted directly to the research described in the application, with the remaining percent effort being devoted to an appropriate academic balance of research, teaching, administrative, and clinical responsibilities?
- Is the institutional commitment to your career development appropriately strong?
- Is there assurance that the institution intends for you to be an integral part of its research program as an independent investigator?
- Is the environment for your scientific and professional development of high quality?
- Are the research facilities, resources and training opportunities, including faculty capable of productive collaboration with you, adequate and appropriate?

What you need to state about your Environment & Institutional Commitment to Candidate

- **State how the scientific environment in which the work will be done will contribute to the probability of success.**
- **State how the proposed experiments will take advantage of unique features of the scientific environment or employ useful collaborative arrangements.**
- **Show evidence of institutional support, including documentation of your formal appointment and rank, time provided, freedom from other commitments, and financial support for doing the research.**

What must be in a K application:
Letters of Support from Collaborators and Consultants

- Signed statements must be provided by all collaborators and consultants confirming participation in the project and describing specific roles. Collaborators and consultants generally do not need to provide their biographical sketches, but information should be provided clearly documenting appropriate expertise in the proposed areas of consulting/collaboration. Collaborators/consultants are generally not directly involved in the development of the career of the candidate as an independent investigator.

- Advisory Committee members (if applicable): Signed statements must be provided by each member of the proposed Advisory Committee. These statements should confirm participation, describe specific roles, and document expertise they will contribute. These individuals generally do not need to provide their biographical sketches (unless they also are research co-investigators).

Letters of Support

1. Chair, Division Director, Dean—anyone in a position to verify you, your credentials, and the institution's support of you and your work.
2. Letters of support should be personalized to what will be done by your mentor, your Department, your institution for you, leaving off the usual flowery "heck of a guy/gal" stuff.
3. Such letters should focus on how the training will fill gaps in your education, training, and research development and how this will specifically make you competitive for R grants.
4. The enthusiasm for you in these letters should be **HIGH**.

What the Reviewers should state about the Overall Impact of your proposal

- Reviewers should provide their assessment of the likelihood that the proposed career development and research plan will enhance the candidate's potential for a productive, independent scientific research career in a health-related field, taking into consideration the criteria below in determining the overall impact score.
- Reviewers should evaluate your potential for developing into an independent scientist with the capacity to make important contributions to the field, taking into consideration your years of research experience and the likely value of your proposed research and career development plan as vehicles for developing a successful, independent research career.

Therefore, what you should state in your Summary about Overall Impact

- **Summarize the important *strengths* of the application—focus on you, your career development plan, your mentors, and your mentoring plan.**
- **Tell the reviewers *what you will learn in your research and training* and why this is *essential and important* for your career development.**
- **Tell the reviewer how the results of your proposed research—what you will learn—will produce a major impact on your scientific field and the likelihood for the project to exert a *sustained, powerful influence* on the research field(s) involved.**

What needs to be in your proposal about Training in the Responsible Conduct of Research

- All applications must include a plan to fulfill NIH requirements for instruction in the Responsible Conduct of Research (RCR).
- The plan must address the five, required instructional components outlined in the NIH policy: 1) *Format* - the required format of instruction, i.e., face-to-face lectures, coursework, and/or real-time discussion groups (a plan with only on-line instruction is not acceptable); 2) *Subject Matter* - the breadth of subject matter, e.g., conflict of interest, authorship, data management, human subjects and animal use, laboratory safety, research misconduct, research ethics; 3) *Faculty Participation* - the role of the mentor(s) and other faculty involvement in the instruction; 4) *Duration of Instruction* - the number of contact hours of instruction, taking into consideration the duration of the program; and 5) *Frequency of Instruction* –instruction must occur during each career stage and at least once every four years. See also NOT-OD-10-019.
- *Applications lacking a Plan for Instruction in the Responsible Conduct of Research will not be reviewed.*

What you should state about your proposed Training in the Responsible Conduct of Research

- Document any prior participation in RCR training and/or propose plans to receive additional instruction.
- Document your specific training in the five components outlined in the NIH Policy:

  Format, Subject Matter, Faculty Participation, Duration, Frequency
- Discuss how the plan is appropriate for your career stage and how it will enhance your understanding of ethical issues related to research.
- Include content to be acquired in proposed activities.

Pitfalls to avoid

- The training does not include the five NIH component requirements.
- The training is vaguely defined and lacks specific details.

Overall--

1. Prove to us why NIH should invest time and money in—YOU.

2. Prove to us how your Career Development Plan/Career Goals & Objectives/Plan to Provide Mentoring will make YOU qualified and ready for independent research.

3. Prove to us that your Research Plan will teach YOU how to do the best research, and also lead you to the forefront of your field.

4. Prove to us that your Mentor(s), Co-Mentor(s), Collaborator(s) are invested in YOU and have the capacity and commitment to make YOU capable of independent research.

5. Prove to us that your research and training Environment & Institutional Commitment to YOU will make you capable of independent research.

For more information--

National Institutes of Health website

http://grants.nih.gov/training/careerdevelopmentawards.html

Extra Credit

Examples of
Reviewer Criticisms/Comments
regarding Career Development Applications

General comments

- Proofread and spell check before submitting the application.
- Avoid inconsistencies in the application, e.g., budget justification says candidate will be 100% supported by K99/R00 but career development section notes candidate will devote 75% time.

Candidate Statement

- The candidate is already an associate professor, raising questions about the appropriateness of his/her career development award.
- The personal statement did not really describe the development of the candidate's research interests and goals, nor discuss future research plans following the proposed K training and research.
- The candidate lacks much institutional or professional society involvement, prior work experience, and publications.
- If publication record is small, explain the reason, e.g., small number but in high profile journal; the specific field requires time to obtain results; etc.
- If shared first-authorship exists, be sure to disclose.
- Candidate's prior publication record will be examined (and expected from prior post-doc training). Emphasize research articles in peer-reviewed journals. Don't present meager research publication record
- The candidate has not distinguished himself/herself in academic work.

Career Development Plan

Plan does not address gaps/justify need for award

- Not clear if candidate needs this award in view of candidate's productivity and other financial support. How will other activities be balanced with this award?
- What does candidate currently know? Is the candidate's prior training in methodology being used and if not, why not?
- It is unclear what training the candidate has received to date (in a specific topic) and the gaps in training this award would fill.
- Are there gaps between candidate's prior and proposed training?
- Too close a link to mentor's parent grant may limit PI's development of independence.
- Is the applicant proposing training in areas where he/she already has some experience/expertise?
- Will candidate really acquire new skills? Is applicant using skills already learned to conduct proposed project?

Insufficiently detailed plan

- Is the career development plan clear, organized, and fully developed?
- Stated career goals are very broad and non-specific.
- Will requisite training in research design and measurement be completed prior to development of methods and protocol?
- Will the timing of didactic training be able to influence the experiential training?
- Is there a formal evaluation of the candidate on a frequent enough basis?
- Little information is provided about the coursework to be taken by the candidate.
- Is there sufficient didactic training? Is there enough or perhaps too much reliance on hands-on, individualized tutorial support from distinguished scientists?
- Is there a rationale for the selection of specific courses?
- Has the rationale for the specific research focus been clearly identified?
- Are goals clearly specified and is there a clear and realistic timeline?
- Consider including a table that clearly shows by year and specific aim, what applicant will do regarding research, career training, and professional development.
- Consider providing specifics about planned publications, other than number. Could include title and authorships in training time table with target dates.

Unrealistic or inadequate plan

- Training is proposed for PI's institution; an outside perspective would be helpful.
- Overly ambitious publication plan; an excessive number of courses in the training plan with courses apparently out of sequence; excessive courses may interfere with research activities.
- Training and research plans are overly ambitious.
- Is applicant missing important training/coursework in a type of research methods that would be critical in assessing the proposed outcome?
- Is research training plan sufficient for needs of candidate (quantity and/or quality)?
- Some experience teaching in a lecture and laboratory format would benefit candidate in obtaining initial faculty position.
- Aspects of training plan should be thoughtful and considered; foundational skills are needed early in award.
- Several training activities are reported to extend across the entire five-year period of funding, although it is difficult to imagine that this protracted training is necessary.

Plan is not consistent with other parts of the application

- Appears that <75% of the candidate's time will be devoted to the award activities.
- Are candidate's prior publications relevant to currently proposed area of study?
- Some sections of the training plan appear "tacked on" and not well integrated.

Mentor

Path to independence unclear

- How close is the link in research interest between primary mentor and candidate? Candidate should differentiate his/her work from mentor's.
- Too much overlap between mentor's work and applicant's work?
- Is the candidate staying with same mentor for K as for other post-doc training? What new things will be learned? What new projects are being proposed?
- If the candidate already has trained with the primary mentor, what additional contributions will result from 5 more years of mentoring?
- Is there opportunity and aplan for the candidate to develop collaborative relationships with other faculty both within and outside the institution?
- If candidate remains at same university where post-doc training occurred, will this inhibit candidate's use of the experience and professional and laboratory opportunities?

Mentor(s) plans are unclear

- What is the location of mentor(s) and any obstacles due to location? Is there a plan of communication (using multiple formats if necessary) for distant mentors and are challenges to such arrangements acknowledged with plans to prevent?
- Not clear what each mentor is contributing or level of commitment.
- Number of co-mentors is large and the majority of them are from the same Center.
- Large number of mentors and training experiences available creates concern that the candidate may be stretched across too many opportunities.
- The inclusion of a primary mentor, a co-mentor, and numerous collaborators raises concerns about the need for careful coordination in order to avoid role confusion. There is little discussion of how the efforts of these individuals will be coordinated.
- How will meaningful interactions between mentors and candidate be maintained? How often will mentors meet with candidate and are plans adequately described?
- Are there evaluation plans and benchmarks for mentors to evaluate the applicant's progress?
- The mentoring plan does not match the applicant's career development plan. The involvement of the primary mentor is not mentioned in the career development plan.
- The mentoring plan does not include any meetings of all the mentors and consultants to share what each is doing with the applicant and their evaluation of candidate's progress.

Adequacy/quality of mentorship

- Do the mentors have strong qualifications and related or complementary research interests/expertise? Adequate prior productivity of candidate and mentors?
- Do the mentor and co-mentors have independent funding?
- Inadequate mentoring (monthly with mentor and most co-mentors).
- Mentor's involvement or perception of involvement, mentor's status (prof, assoc., assist.), publication record, current and past funding.
- Is the mentoring plan sufficient in all areas needed?
- Specific detail about the actual number of post-doctoral scholars mentored by the mentor is needed.
- Is the duration of mentoring sufficient for training needed?
- If mentor or co-mentors are relatively junior, do they have current funding and track records of mentoring K trainees?
- No specific interactions planned with other senior scientists in the area of interest.
- Career development and training plan really require a mentorship committee of national/international experts in the target field to regularly interact with the candidate and provide training and discussion that she cannot find on her own.
- Are mentors listed for needed areas (qualitative data collection, analysis and interpretation or survey construction, testing, and data collection)?

Environment (institutional support)

- Quality of environment
- Explicit and well described institutional support.
- Letter of support stating that the department will provide the applicant with the release time to devote 75% effort to the award.
- Are facilities being used at training institute? Document and explain their roles/contributions and advantages.
- Does the Chair provide evidence that the sponsoring institute is strongly committed to supporting career path of candidate?
- Institutional support should define specifics as to space, start up or supplemental funding, guarantee of a position, etc.

Letters of support

- Letters of support solid but not outstanding.
- Letters of support should be enthusiastic about candidate, as well as support applicant's promise as a clinical and biomedical researcher.
- Form letters for co-mentors and consultants are not good.
- Letters should be personalized for what the writer (co-mentor, collaborator, consultant, advisor, oversight committee member, etc.) specifically will do and his/her enthusiasm for the candidate and for the candidate's plans and goals and research proposed.

OK, now go to the *grants.nih.gov/training/careerdevelopmentawards* website and get started!

National Institutes of Health website

http://grants.nih.gov/training/careerdevelopmentawards